

## **REMARKS / ARGUMENTS**

### **I. General Remarks**

Please consider the application in view of the following remarks. Applicants thank the Examiner for his careful consideration of the application.

### **II. Disposition of Claims**

Claims 1-3, 5-18, and 60-66 are pending in this application. Claims 4, 18, and 22 were cancelled previously. Claims 19-59 were cancelled previously in response to a restriction requirement.

In this Response, claims 1 and 61 have been amended, and claims 63-66 are new. These amendments and additions are supported by the specification as filed.

Claims 1-3, 5-18, and 60 stand rejected under 35 U.S.C. § 112. Claims 1-3, 6-15, and 17 stand rejected under 35 U.S.C. § 102(b). Claims 1-3, 5, 6, 14-18, and 60-62 stand rejected under 35 U.S.C. § 103(a).

### **III. Rejections of Claims**

#### **A. Rejections of Claims Under 35 U.S.C. § 112, First Paragraph**

Claims 1-3 and 5-18 stand rejected under 35 U.S.C. § 112, first paragraph, as containing "subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." (Office Action at ¶ 2.) With respect to these rejections, the Office Action states that "[t]he limitations of 350 microns to about 2380 microns and the pressure differential of above about 60 psi is not supported by the specification as originally filed." *Id.* In response to Applicants' remarks regarding these rejections in their previous response, the Office Action states:

The rejection of the claims, under 112, first paragraph, new matter is maintained since the newly amended limitations of pressure and particle size are not supported by the specification as originally filed. On page 9 of applicant's response, applicant states that a size of 400 mesh corresponds to 37 microns and a size of 8 mesh corresponds to 2380 microns. The limitation of 350 microns are not supported by the originally filed specification.

*Id.* at ¶ 16. Applicants respectfully disagree with these rejections.

In order to properly reject a claim under § 112, first paragraph, "[t]he examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the

art would not recognize in the original disclosure a description of the invention defined by the claims.” MANUAL OF PATENT EXAMINING PROCEDURE (“MPEP”) § 2163(II)(A)(3)(b) (2005). Merely arguing lack of explicit “recitation or suggestion” in the disclosure is not sufficient to satisfy this burden. See *In re Wertheim*, 541 F.2d 257, 265 (CCPA 1976) (“The PTO has done nothing more than argue lack of literal support, which is not enough.”). Rather, the determination of whether a claim limitation is sufficiently supported in the specification as filed “must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure.” MPEP § 2163.05 (discussing *In re Wertheim*, 541 F.2d 257, where a disclosed range of “25%-60%” range did not support a new limitation of “at least 35%,” but it did support a new limitation of “between 35% and 60%”); see *id.* at § 706.03(o) (discussing new matter rejections, and referring to *In re Wertheim* and MPEP § 2163.05 for determining whether addition of specific numerical ranges after a broader disclosure constitutes new matter). Respectfully, the Office Action does nothing more to fulfill this burden than to point out the particle size values that are explicitly written in the specification, and that the specific ranges stated in Applicants’ claims are not so explicitly written in the specification. According to the MPEP and the case law discussed therein, this is insufficient to maintain the rejection of Applicants’ claims under 35 U.S.C. § 112, first paragraph.

Moreover, the rejection is improper. Applicants’ specification does teach to a person skilled in the art the ranges of particle sizes stated in Applicants’ claims. With respect to the limitations on particle sizes, Applicants’ specification as filed contains at least the following discussion of particle sizes:

The degradable particles generally should have a particle size that is suitable for use in jetting tools that may be used in the methods of the present invention. In an exemplary embodiment, the degradable particles should have an average particle size in the range of from about 400 mesh to about 8 mesh. In other exemplary embodiments, the degradable particles should have an average particle size in the range of from about 100 mesh to about 40 mesh.

(Application at ¶ 0020.) A size of 400 mesh corresponds to 37 microns; a size of 8 mesh corresponds to 2.38 millimeters, or 2,380 microns. The range of particle sizes recited in Applicants’ claims lies completely within this disclosed range, and a person of ordinary skill

would understand that the specification teaches particle sizes of this narrower range in addition to the broader range explicitly stated in the specification. Similarly to the limitation of “between 35% and 60%” discussed in MPEP § 2163.05 and *In re Wertheim* above, a person skilled in the art would consider this range of average particle sizes to be inherently supported by at least the portion of Applicants’ disclosure quoted above. The Office Action’s statement that these numbers are not written explicitly in the specification as filed is not sufficient to negate this. See MPEP § 2163.05.

Similarly, with respect to the limitation of a jet pressure differential of from 60 psi to about 10,000 psi, Applicants respectfully submit that the specification does contain sufficient teaching that a person skilled in the art would understand that jet pressure differentials of from 60 psi to about 10,000 psi could be used. First, independent claim 1 (and all claims depending therefrom) recite methods of cleaning a surface, and Applicants’ specification teaches that, in methods of cleaning a surface according to their invention, the cleaning fluid should be jetted “at a pressure sufficient to have the desired cleaning effect.” (Specification at ¶ 0023.) A person of skill in the art would understand from this disclosure that the jet pressure differential needs to be of a certain minimum strength (*e.g.*, 60 psi) in order to have some cleaning effect. With respect to possible jet pressure differentials, Applicants’ specification contains at least the teachings that “the cleaning fluid may be jetted at a jet pressure differential below about 2,000 psi,” and that “the cutting fluid may be jetted at a jetting differential pressure in the range of, but not limited to, 1,500 psi to about 10,000 psi.” (Specification at ¶¶ 0023 & 0031 (emphasis added).) The lower end of the jet pressure differential range recited in Applicants’ claims (*i.e.*, 60 psi) is “below about 2,000 psi,” as taught in Applicants’ specification, and the upper end of that range matches the highest jet pressure differential explicitly taught in Applicants’ specification (*i.e.*, “1,500 to about 10,000 psi”). Thus, the pressure differential range recited in Applicants’ claim 1, as amended herein, is entirely within the scope of the jet pressure differentials taught in the specification, and a person of ordinary skill would understand that the specification teaches jet pressure differentials within this narrower range. Similarly to the limitations discussed in MPEP § 2163.05 and *In re Wertheim* above, a person skilled in the art would consider this range of jet pressure differentials to be inherently supported by at least the portion of Applicants’ disclosure quoted above.

Therefore, for at least these reasons, Applicants respectfully request the withdrawal of these rejections under § 112, first paragraph with respect to claim 1 and all claims depending therefrom (*i.e.*, claims 2, 3, and 5-18).

**B. Rejections of Claims Under 35 U.S.C. § 112, Second Paragraph**

Claims 1 and 60 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. (*See* Office Action at ¶ 4.) With respect to these rejections, the Office Action states:

Claims 1 and 60 are indefinite because of the phrase “allowing at least a portion of at least one of the degradable particles to degrade”. Specifically, the phrase is indefinite because it is unclear when the degradation is occurring. Does the particle degrade before, during or after the cleaning step. Claim 1 is indefinite because it is unclear what one of ordinary skill in the art would consider as a pressure differential”. What is the differential? What two elements are being compared to form a difference in pressure? Does the pressure differential refer to the pressure difference at the inlet and outlet of a blast nozzle?

*Id.* at ¶ 16. Applicants respectfully disagree with these rejections.

First, with respect to the timing of the step of “allowing at least a portion of at least one of the degradable particles to degrade,” Applicants respectfully assert that the failure to specify in the claims when this step occurs does not render claims 1 and 60 indefinite. According to Applicants’ claims, this step may occur at any time during a method of Applicants’ invention, and a person skilled in the art will recognize when a portion of the degradable particles should be allowed to degrade in a particular application of Applicants’ invention. The Office Action has presented no reason why Applicants’ claim is indefinite simply because it covers methods that could allow this step to occur at any time. *See* MPEP § 2173.04 (“breadth is not indefiniteness”). Accordingly, Applicants respectfully assert that their recitations of the claimed methods in claims 1 and 60 satisfy the requirements of 35 U.S.C. § 112, second paragraph.

With respect to the term “jet pressure differential,” Applicants respectfully assert that this term is sufficiently definite to comply with the requirements of 35 U.S.C. § 112, second paragraph. “Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.” *See* MPEP § 2173.05(b)

(citations omitted). The term “differential pressure” is understood in the art to mean “the difference between two pressures.” See B. SCHARF, ENGINEERING AND ITS LANGUAGE 296 (1971) (copies of the cited pages from this text are enclosed for the Examiner’s convenience.) A person of skill in the art would understand that the relevant pressure difference in the context of jetting a fluid (e.g., through a nozzle) is the difference between the pressure on the outlet side of the nozzle (e.g.,  $p_2$ ) and the pressure on the inlet side of the nozzle (e.g.,  $p_1$ ). See WILLIAM S. JANNA, INTRODUCTION TO FLUID MECHANICS 572-73 (3rd ed. 1993) (see Fig. 10.23 for an example of one such jet nozzle) (copies of the cited pages from this text are enclosed for the Examiner’s convenience.) Accordingly, Applicants respectfully assert that the use of the term “jet pressure differential” in claim 1 satisfies the requirements of 35 U.S.C. § 112, second paragraph.

Thus, Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. § 112, second paragraph, against claims 1 and 60.

**C. Rejections of Claims Under 35 U.S.C. § 102(b)**

**1. Rejections of Claims Under 35 U.S.C. §102(b) Over U.S. Patent No. 5,993,562**

Claims 1-3 and 6-14 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,993,562 to Roelofs *et al.* (“Roelofs”). With respect to these rejections, the Office Action states:

Roelofs teaches a method of cleaning the interior surfaces of a fluid delivery system by blasting with an abrasive particle in a liquid carrier. In col. 6, lines 1-65, Roelofs teaches particle sizes ranging from 5 to 500 microns. In reference to claim 1, col. 5, lines 10-11 teaches an inlet pressure of 70 psi. In reference to claims 2-3, refer to col. 6, lines 53-55. In reference to claims 6-7 and 10-13, refer to col. 6, lines 30-39 which teach abrasive particles comprising starch, boric acid, calcium borate, zinc borate, and sodium bicarbonate. In reference to claims 8-9, refer to co. 6, lines 53-67. In reference to claim 14, the limitations are inherently met since Roelofs teaches the claimed particle size.

(Office Action at ¶ 6.) In response to Applicants’ previous remarks, the Office Action further states:

The rejections of the claims as being anticipated and unpatentable over Roelofs in view of the secondary references are maintained. Applicant argues that Roelofs fails to teach the pressure differential above about 60 psi. Applicant’s arguments are

unpersuasive since Roelofs teaches an inlet pressure of 70 psi. Additionally, the difference in pressure between the inlet and outlet pressures is 60 psi, which would read on the limitations of “above about 60 psi”, since 59 psi would be considered “about 60 psi”. Additionally, it is unclear what one would consider as the pressure differential, as described above.

(Office Action at ¶ 19.) Applicants respectfully disagree with these rejections.

In order to form a basis for a rejection under 35 U.S.C. § 102(b), a prior art reference must disclose each and every element as set forth in the claim. MPEP § 2131. Moreover, “[t]he identical invention must be shown in as complete detail [in the prior art reference] as is contained in the claim” in order to anticipate that claim. *Id.* (emphasis added). In this response, Applicants have amended claim 1 to recite that the cleaning fluid is jetted at the surface to be cleaned at a jet pressure differential of from 60 psi to about 10,000. However, *Roelofs* does not disclose or teach jetting a cleaning fluid at a jet pressure differential above 60 psi. *Roelofs*’ teaching of an inlet pressure of 70 psi does not teach a jet pressure differential that falls within the scope of Applicants’ claims, as amended herein. Rather, the highest jet pressure differential (*i.e.*, difference between inlet pressure and outlet pressure) taught by *Roelofs* is the first of the two in the above quoted passage, which is equal to 60 psi. (*Roelofs* at col. 5, ll. 44-59.) Therefore, the inlet/outlet pressures disclosed in *Roelofs* do not teach a jet pressure differential that is above 60 psi, as recited in claim 1, as amended herein, and thus *Roelofs* cannot anticipate this claim.

With respect to the above-quoted remark that the term “pressure differential” is unclear, Applicants have shown in Section III.B., *supra*, that the term “jet pressure differential” is sufficiently definite to comply with the requirements of 35 U.S.C. § 112, second paragraph.

Thus, because *Roelofs* does not disclose each element of claim 1, *Roelofs* does not anticipate this claim, and thus claim 1 is allowable over *Roelofs*. Moreover, since “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers,” and since claims 2, 3, and 6-14 depend, either directly or indirectly, from independent claim 1, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

**2. Rejections of Claims Under 35 U.S.C. § 102(b) Over U.S. Patent No. 5,827,114**

Claims 1-3, 6-8, 10-15, and 17 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,827,114 to Yam *et al.* ("*Yam I*"). With respect to these rejections, the Office Action states:

Yam teaches a method of cleaning a surface comprising jetting against a surface a cleaning fluid comprising a liquid base fluid with degradable particles having a particle size within the range of 10-10,000 microns, and a pressure of below 500 psi (abstract, col. 5, lines 35-40). In reference to allowing the particles to degrade, col. 9, lines 46-55 teaches that after contact with the substrate, the abrasive particles are broken down and have a smaller diameter. Re claim 2, refer to col. 6, lines 49-50. Re claim 3, refer to col. 1, lines 27-28 teaches water. Re claim 6, Yam teaches metal salts. Re claim 7, refer to col. 11, lines 15-17. Re claim 8, refer to col. 6, lines 1-55. Re claim 10-13, refer to col. 5, lines 65-68. Re claim 14, refer to col. 5, lines 33-40. Re claim 15, refer to col. 8, lines 59-60. Re claim 17, refer to col. 11, lines 19-20.

(Office Action at ¶ 7 (emphasis added).) Applicants respectfully disagree with these rejections.

In order to form a basis for a rejection under 35 U.S.C. § 102(b), a prior art reference must disclose each and every element as set forth in the claim. MPEP § 2131. However, *Yam I* does not disclose or teach a cleaning fluid that comprises degradable particles, or a method that comprises allowing at least a portion of those particles to degrade, as recited in Applicants' claim 1. Thus *Yam I* cannot anticipate Applicants' claims.

*Yam I* teaches the use of water-soluble blasting media wherein the media particles are broken down or eroded upon contact with the substrate (*i.e.*, the surface being blasted or cleaned):

Initially, the abrasive particles contained in slurry 18 have an average diameter of between 50 and 500 microns which is the preferable range. After contact with the substrate 14, the abrasive particles in the used slurry will be substantially broken down and have a diameter typically ranging between 5 and 50 microns.

(See *Yam I* at col. 9, ll. 47-52 (emphasis added).) This does not teach the kind of chemical degradation that Applicants' claims require. Applicants' claims involve the use of degradable particles that, according to Applicants' specification, comprise "materials capable of undergoing

an irreversible degradation during or after use.” (Specification at ¶ 0012.) The specification also defines the terms “degradable” and “degradation”:

Degradable particles suitable for use in the present invention are those materials capable of undergoing an irreversible degradation during or after use. The term “irreversible” as used herein means that the degradable material, once degraded, should not naturally or *sua sponte* recrystallize, reconstitute, or resolidify. The terms “degradation” and “degradable” refer to both the relatively extreme cases of hydrolytic degradation that the degradable material may undergo, i.e., heterogeneous (or bulk erosion) and homogeneous (or surface erosion), and any stage of degradation in between these two. This degradation can be a result of, *inter alia*, a chemical or thermal reaction or a reaction induced by radiation.

*Id.* (emphasis added). These types of irreversible chemical degradation that claim 1 requires are completely different from the physical processes of dissolving in water or eroding on contact with a substrate that the blasting media disclosed in *Yam I* would undergo. The Office Action indicates no other process of degradation occurring in *Yam I* that might teach the degradation process or degradability of particulates required in Applicants’ claims.

Because *Yam I* cannot anticipate claim 1, as amended herein, this claim allowable over *Yam I*. Moreover, since “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers,” and since claims 2, 3, 6-8, 10-15, and 17 depend, either directly or indirectly, from independent claim 1, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

**D. Rejections of Claims Under 35 U.S.C. § 103(a)**

**1. Rejections of Claims Under 35 U.S.C. § 103(a) over U.S. Patent No. 5,512,071**

Claims 1-3, 6, 14, 15, 17, and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,512,071 to Yam *et al.* (“*Yam II*”). With respect to this rejection, the Office Action states:

Yam teaches a method of stripping contaminants from a solid surface comprising blasting the surface with water soluble abrasive particles having a particle size between 10-1000 microns at a pressure of from 10-100psi. Yam fails to specifically teach the particles degrading. However, one would have reasonably expected the particles to degrade since the abrasive particles are water soluble and are disposed in a water stream. Re claims 2-3,



col. 3, lines 20-21. Re claim 6, col. 3, lines 32-85. Re claim 14, col. 3, lines 10-15. Re claim 15, col. 6, lines 60-61. Re claim 17, col. 5, lines 34-35. Re claim 18, col. 6, lines 59-60.

(Office Action at ¶ 11.) Applicants respectfully disagree with these rejections.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MPEP § 2142. However, *Yam II* does not teach or suggest a cleaning fluid that comprises degradable particles, or a method that comprises allowing at least a portion of those particles to degrade, as recited in Applicants' claim 1. Thus *Yam II* cannot obviate Applicants' claims. *Yam II*, like *Yam I*, teaches the use of water-soluble blasting media. (See *Yam II* at col. 3, ll. 11-13.) As discussed in Section III.C.2., *supra*, the chemical degradation that Applicants' claim 1 requires is completely different from the physical process of simply dissolving in water that the blasting media disclosed in *Yam II* would undergo. The Office Action indicates no other process of degradation occurring in *Yam II* that might teach the degradation process or degradability of particulates required in Applicants' claims.

Thus, since *Yam II* does not teach or suggest each element of claim 1, *Yam II* cannot obviate claim 1. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2, 3, 6, 14, 15, 17, and 18 depend, either directly or indirectly, from independent claim 1, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

**2. Rejections of Claims Under 35 U.S.C. § 103(a) Over U.S. Patent No. 4,575,396 in View of *Yam I***

Claims 1-3, 5, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,575,396 to Matsumoto *et al.* ("*Matsumoto*") in view of *Yam I*. With respect to this rejection, the Office Action states:

Matsumoto teaches a method of wet blasting a surface with blasting media in order to clean the surface. In col. 3, lines 5-10, Matsumoto teaches blasting media comprising particles having a diameters of less than 0.5mm, which is equivalent to 500 microns. In col. 6, lines 20-25, Matsumoto teaches jetting the blasting media with water and compressed air against the object to be cleaned.

Matsumoto fails to teach the limitations of directing a jet at a pressure differential of about 60 psi. *Yam* teaches wet blasting at liquid pressures of less than 500 psi in order to effectively remove

contaminants. It would have been within the level of the skilled artisan to include a pressurized stream, as taught by Yam, for purposes of blasting the surface in order to enhance the removal of contaminants from the substrate surface. In reference to the particle degrading, one would reasonably expect the particles to degrade since Matsumoto teaches the same polymeric particle (polycarbonate and polyester), as the instantly claimed invention. Matsumoto teaches the genus polycarbonate and polyester as the claimed invention. Matsumoto teaches the genus polycarbonate and polyester, which would include aliphatic polycarbonate and aliphatic polyester. Therefore, one would reasonably expect the particles of Matsumoto to be capable of degradation as well. In reference to claims 2-3, refer to col. 6, lines 20-25. In reference to claim 5, refer to col. 4, lines 27-29. In reference to claim 14, the limitations are met since Matsumoto teaches a particle size of less than 500 microns.

(Office Action at ¶ 12 (emphasis added).) Applicants respectfully disagree with these rejections.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MPEP § 2142. However, neither *Matsumoto* nor *Yam I* teaches or suggests the use of degradable particles, nor do those references teach any method that includes allowing such degradable particles to degrade. The Office Action indicates that *Matsumoto*'s disclosure of "the genus polycarbonate and polyester . . . would include aliphatic polycarbonate and aliphatic polyester" as recited in Applicants' claims. (Office Action at ¶ 12.) However, as the MPEP notes, a reference's disclosure of a genus does not necessarily anticipate or obviate a claim to a species within the genus. MPEP § 2131.02. Rather, one must look to the differences between the disclosed genus and the claimed species, and thus determine whether a person skilled in the art would have been motivated to select the claimed species from the broad teaching of the genus in the prior art. *Id.* at § 2144.08.

*Matsumoto*'s disclosure of the genres polycarbonates and polyesters does not teach or suggest the species of degradable polycarbonates, polyesters, and other degradable particles recited in Applicants' claims. The genres of "polycarbonates" and "polyesters" are extremely large, and the members of those genres vary greatly in chemical structure, physical properties, and use. Indeed, as Applicants noted in their previous response, certain species within the genus of polycarbonates (*e.g.*, aromatic polycarbonates) are in fact resistant to the same degradation processes that Applicants' claims require, and thus cannot fall within the scope of Applicants' claims. Thus, because of these critical variations within the genres of materials

disclosed in *Matsumoto* (e.g., polycarbonates), the disclosure of those genres does not teach the particular species of degradable particles recited in Applicants' claims sufficiently to obviate those claims. Moreover, even if the polycarbonates in *Matsumoto* are not necessarily of the type that are resistant to degradation (at minimum, it would not be reasonable to expect that the polycarbonate particles disclosed in *Matsumoto* are capable of degradation, as the Office Action suggests. Finally, as discussed in Section III.C.2., *supra*, *Yam I* also does not teach or suggest degradable particles, or a method that includes allowing such particles to degrade.

Therefore, because neither *Matsumoto* nor *Yam I* teaches or suggests allowing at least a portion of at least one of the degradable particles to degrade, or any particle that would be capable of doing so, Applicants respectfully assert that this combination of references does not teach each element of claim 1. Thus, claim 1 is allowable over that combination of references. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2, 3, 5, and 14 depend, either directly or indirectly, from independent claim 1, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

**3. Rejections of Claims Under 35 U.S.C. § 103(a) Over *Yam I* in View of U.S. Patent No. 5,865,902**

Claims 16 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over *Yam I* in view of U.S. Patent No. 5,865,902 to *Yam et al.* ("*Yam III*"). With respect to this rejection, the Office Action states:

*Yam* teaches the blast nozzle 20 at an angle to blast the substrate surface. *Yam* fails to teach the angles recited in claim 16. *Yam* teaches a method of cleaning contaminants from a substrate. Col. 5, lines 45-60 teaches positioning the blast nozzle at an angle of about 30 degrees for purposes of effectively removing contaminants from the substrate surface. It would have been within the level of the skilled artisan to have modified the method of *Yam* to include positioning the blast nozzle at an angle of about 30 degrees, as taught by *Ham*, for purposes of effectively removing contaminants from the substrate surface. *Yam* '114 fails to teach the amount of degradable particles. Col. 5, lines 30-35 of *Yam* '902 teaches 1-10 lbs. of media. It would have been within the level of the skilled artisan to have adjusted the amount of abrasive particles in solution, depending on the type of surface to be cleaned and the amount of contaminants present on the substrate surface.

(Office Action at ¶ 13.) Applicants respectfully disagree with these rejections.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MPEP § 2142. However, neither *Yam I* nor *Yam III* teaches or suggests the use of degradable particles, nor do those references teach any method that includes allowing such degradable particles to degrade. *Yam III*, like *Yam I* and *Yam II*, teaches the use of water-soluble blasting media. (See *Yam III* at col. 9, ll. 49-52 (emphasis added).) As discussed in Section III.B.2., *supra*, the chemical degradation that Applicants' claim 1 requires is completely different from the physical process of simply dissolving in water that the blasting media disclosed in *Yam III* would undergo. The Office Action indicates no other process of degradation occurring in *Yam III* that might teach the degradation process or degradability of particles required in Applicants' claims. Moreover, as discussed in Section III.C.2, *supra*, *Yam I* does not teach or suggest degradable particles, or a method that includes allowing such particles to degrade.

Moreover, the combination of *Yam I* and *Yam III* to reject Applicants' claims is improper because *Yam III* specifically teaches away from the use of particles having an average particle size in the range of from about 350 microns to about 2380 microns, as recited in Applicants' claim 1. See MPEP § 2145 ("It is improper to combine references where the references teach away from their combination." (citing *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983))).

Specifically, *Yam III* teaches that "[p]articles larger than about 300 microns are preferably not employed because such particles can damage the electronic hardware components being blast cleaned." (*Yam III* at col. 7, ll. 19-20.) Thus, *Yam III* cannot properly be combined with *Yam I* to obviate Applicants' claim 1, or any claim depending therefrom.

Therefore, because the combination of *Yam I* and *Yam III* does not teach or suggest each element of claim 1, and because the combination of those references is improper, the combination of *Yam I* and *Yam III* cannot obviate claim 1. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2, 3, 5, and 14 depend, either directly or indirectly, from independent claim 1, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

**4. Rejections of Claims Under 35 U.S.C. § 103(a) Over *Roelofs* in View of EP 0510762**

Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over *Roelofs* in view of European Patent Application Publication No. EP0510762 by Houghton *et al.* ("*Houghton*"). With respect to this rejection, the Office Action states:

Roelofs fails to teach the limitations of claim 17. Houghton teaches a cleaning composition comprising abrasive particles, such as perborate compounds. On page 8, lines 50-65, Houghton teaches that the cleaning compositions include conventional adjuvants such as corrosion inhibitors. It would have been obvious to a person of ordinary skill in the art to modify the method of Roelofs to include adjuvants, such as corrosion inhibitors, as taught by Houghton, which are conventionally used in the cleaning compositions.

(Office Action at ¶ 14.) Applicants respectfully disagree with this rejection.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MPEP § 2142. However, as discussed in Section III.C.1, *supra*, *Roelofs* does not teach or suggest jetting a cleaning fluid at a surface to be cleaned at a jet pressure differential of from 60 psi to about 10,000 psi, as recited in claim 1, as amended herein. Nor does *Houghton* teach or suggest this limitation. Rather, *Houghton* only teaches certain types of cleaning fluids, and does not mention jetting a cleaning fluid at a surface at all, much less jetting at any particular jet pressure differential. Since claim 17 depends from claim 1, claim 17 also incorporates this limitation that neither *Roelofs* nor *Houghton* teaches or suggests. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, since neither *Roelofs* nor *Houghton* teaches jetting a cleaning fluid at a jet pressure differential of from 60 psi to about 10,000 psi, the combination of *Roelofs* and *Houghton* cannot obviate claim 17. Accordingly, Applicants respectfully request the withdrawal of this rejection.

**5. Rejections of Claims Under 35 U.S.C. § 103(a) Over *Matsumoto***

Claims 60-62 stand rejected under 35 U.S.C. § 103(a) as unpatentable over *Matsumoto*. With respect to this rejection, the Office Action states:

Matsumoto teaches a method of wet blasting a surface with blasting media in order to clean the surface. In col. 3, lines 5-10, Matsumoto teaches blasting media comprising particles having a diameters of less than 0.5mm, which is equivalent to 500 microns. In col. 6, lines 20-25, Matsumoto teaches jetting the blasting media with water and compressed air against the object to be cleaned.

In reference to the particle degrading, one would reasonably expect the particles to degrade since Matsumoto teaches the same polymeric particle (polycarbonate and polyester), as the instantly claimed invention. Matsumoto teaches the genus polycarbonate and polyester as the claimed invention. Matsumoto teaches the genus polycarbonate and polyester, which would include aliphatic polycarbonate and aliphatic polyester. Therefore, one would reasonably expect the particles of Matsumoto to be capable of degradation as well. In reference to claims 61-62, refer to col. 4, lines 25-29 and col. 3, lines 3-5.

(Office Action at ¶ 15.) In response to Applicants' remarks from their previous response regarding the rejections under § 102(b) over *Matsumoto*, the Office Action states:

The rejection of the claims, as being anticipated by Matsumoto et al. is withdrawn in view of the newly amended claims. Applicant argues that Matsumoto fails to teach degradable particles. Applicant argues that Matsumoto teaches patent 3,313,067 which teaches aromatic polycarbonates. The examiner agrees that '067 teaches aromatic polycarbonates. However, there is not specific teaching that the polycarbonates, recited in Matsumoto are aromatic. Applicant has applied the teachings of '067 out of context. Matsumoto describes prior art in the background of the invention and refers to the '067 patent. However, there is no teaching that the polycarbonates which Matsumoto uses are only aromatic. Matsumoto teaches the genus polycarbonate and polyester, which would include aliphatic polycarbonate and aliphatic polyester. Therefore, one would reasonably expect the particles of Matsumoto to be capable of degradation as well. Therefore, the claims are unpatentable over Matsumoto et al. for the reasons recited above.

(Office Action at ¶ 17.) Applicants respectfully disagree with these rejections.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MPEP § 2142. However, as discussed in Section III.D.2., *supra*, *Matsumoto* does not teach or suggest the use of degradable particles, nor do those references teach any method that includes allowing such degradable particles to degrade, as recited in claim 60. The Office Action indicates that *Matsumoto's* disclosure of the genus of polycarbonates generally (*see Matsumoto* at col. 4, ll. 27-30) teaches the degradable particles in Applicants' claims based on Applicants' disclosure that the degradable particles may comprise certain aliphatic polycarbonates. However, as the MPEP notes, a prior art reference's disclosure of a genus does not necessarily anticipate or obviate a claim to a species within the genus. MPEP

§ 2131.02. Rather, one must look to the differences between the disclosed genus and the claimed species, and thus determine whether a person skilled in the art would have been motivated to select the claimed species from the broad teaching of the genus in the prior art. *Id.* at § 2144.08.

As discussed in Section III.D.2., *supra*, in view of the critical variations within the genres of materials disclosed in *Matsumoto*, *Matsumoto's* disclosure of those genres does not teach or suggest the species of degradable polycarbonates, polyesters, and other degradable particles recited in Applicants' claims. Even if the polycarbonates in *Matsumoto* are not necessarily of the type that are resistant to degradation, at minimum, it would not be reasonable to expect that the polycarbonate particles disclosed in *Matsumoto* are capable of degradation, as the Office Action suggests.

Therefore, because *Matsumoto* does not teach or suggest each element of claim 60, that claim is allowable over *Matsumoto*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 61 and 62 depend, either directly or indirectly, from independent claim 60, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

### **SUMMARY**

In light of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that there are no fees due in association with this filing of this Response. However, should the Commissioner deem that any additional fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to the Deposit Account of Halliburton Energy Services, Inc., No. 08-0300.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert A. Kent", written over a horizontal line.

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